

# Python Summary 2: Conditionals and Conditions

## If Statements:

An if statement allows you to choose which code to run, based on whether a condition is met. An if statement looks as follows:

```
if age >= 16:  
    print("Yes, you may drive")
```

Notice that the condition is followed by a ':', and the line of code which should be run if the condition is True is indented. If we wanted to run several lines of code when the condition was True, we would just need to indent all the lines of code by the same amount (usually 4 spaces, or 1 tab).

If statements can also specify what to do if the condition is False. This is done by using 'else:'. As before, the code that belongs to the else must be indented.

```
if age >= 16:  
    print("Yes, you may drive")  
else:  
    print("No, you cannot drive")
```

if statements can also be used to choose from one of several options. To do this, we use "elif" which is short for 'else if'.

```
if age < 16:  
    print("You are too young to drive")  
elif has_license:  
    print("You may drive")  
else:  
    print("You may not drive")
```

## Conditions

The conditions for if and elif can be anything that evaluates to True or False. Many conditions are either a boolean variable, or make use of a comparison operator.

Here are some common comparison operators:

Operator	Name	Example	Example result
>	Greater than	7 > 5	True
>=	Greater than or equal to	6 >= 6	True
<	Less than	7 < 5	False
<=	Less than or equal to	3 <= 5	True
==	Equality	"John" == "Smith"	False

Boolean operators are also often used in these expressions. Here are some boolean operators:

Operator	True when:	Examples	Example results
not		not True	False
and	True when all values are True	True and False True and True False and False	False True False
or	True when any value is true	True or False False or False	True False

Example:

```
if (age >= 16) and has_licence:  
    print("You can drive")  
elif age < 16:  
    print("Too young")  
elif not has_licence:  
    print("You should get your licence")
```

## Test Yourself:

Write some code to accomplish the following tasks in order:

1. Create an integer variable
2. Using an if/elif/else statement, do the following:
  1. if the variable is less than 5, print "Fizz"
  2. else if the variable is greater than 10, print "Buzz"
  3. otherwise, print the number